

Radiologic Case

Fever, Leukocytosis, and Referred Thigh Pain

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A "Radiologic Case" is published in this format on a regular basis. Physicians interested in contributing to the series are encouraged to send their radiologic cases to the series' editor.

JONATHAN M. LEVY, MD
Series' Editor

The patient, a 43-year-old man with insulin-dependent diabetes mellitus, presented four days after sustaining a dog bite on his right hand, complaining of excruciating, intermittent, right thigh pain. He was febrile (temperature, 38.3°C [101°F]) and had a leukocyte count of 27.8×10^9 per liter (27,800 per mm³). On physical examination, he had a 2-cm open wound with minimal purulent drainage on the fourth digit of his right hand. He had some limited range of motion of the right hip and focal muscular tenderness in the medial thigh, but no other infectious or neurologic findings. A radiographic evaluation included chest, lumbar, right femur, and pelvic films and a computed tomographic (CT) scan of the abdomen; all were normal. In addition, a nuclear medicine scan showed no signs of infection. A CT scan and a magnetic resonance image (MRI) of the pelvis were done (Figures 1 and 2).

What is the most likely diagnosis in this patient?

What study could be done to confirm the diagnosis?

SEE FOLLOWING PAGE FOR DIAGNOSIS AND DISCUSSION



Figure 1.—A computed tomographic scan of the pelvis, axial section, shows a 3-cm mass between the external iliac artery and vein.

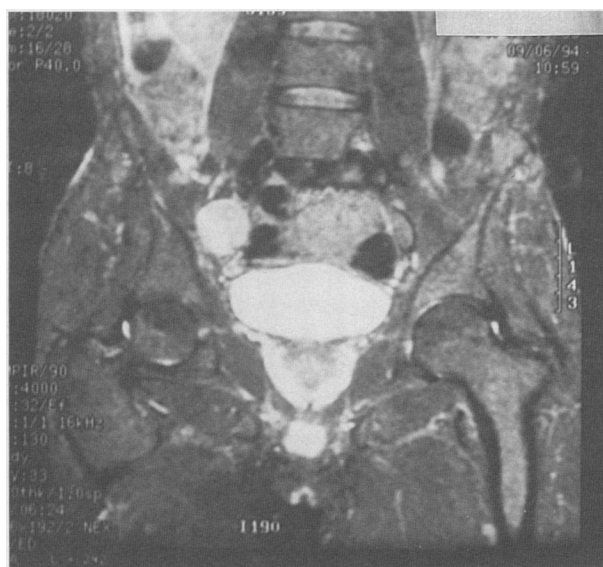


Figure 2.—A magnetic resonance image of the pelvis, coronal section, shows a 3 x 3 x 4-cm mass in the right internal iliac region.

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ANSWER: *Pelvic schwannoma*

THE CT AND MRI SCANS of the pelvis detected a right retroperitoneal mass. A CT-guided fine needle aspirate (FNA) was used to obtain a tissue diagnosis. The biopsy showed a neurilemma (schwannoma).

Schwannomas are benign nerve sheath tumors of neural crest cells that arise from cranial or spinal nerve roots to form an encapsulated tumor. They make up 10% of intracranial tumors and 25% of intraspinal tumors.^{1(pp2171-2173)} These tumors grow slowly and are often asymptomatic. There is no gender preference. They usually occur between the ages of 19 and 69 years.² Sensory roots are most frequently affected. The most common intracranial tumor is acoustic neuroma, which attaches to the vestibular branch of the eighth cranial nerve. Presenting symptoms include tinnitus and hearing loss. The sensory portion of the trigeminal nerve (fifth) may also be affected, but less commonly. When extradural, the tumor is generally associated with large nerve trunks and most frequently involves the thoracic region.^{1,3(pp1351-1352)} The tumor may originate in the mediastinum or retroperitoneum.²

Symptomatic schwannomas can be treated surgically. The tumors are usually well encapsulated and attached to, but easily dissected free from, the nerve. There are reports of recurrences if the tumor has not been completely excised. Rarely do they become malignant.^{4,5(pp173-175)}

This case was perplexing because of two concurrent processes, an infection and the thigh pain. Cultures of specimens of blood, urine, and FNA were negative for pathogens. None of the radiographic studies revealed

sources of infection. The probable source was the finger wound. The patient responded to empiric treatment with antibiotics with resolution of the fever and elevated leukocyte count. Once diagnosed, the schwannoma was treated by surgical excision, and the leg pain eventually resolved.

Retroperitoneal pelvic tumors are rare: fewer than 24 cases have been reported.^{2,6} They frequently present as an asymptomatic mass, and other symptoms include abdominal, leg, or back pain, swelling, uterine bleeding, or occasionally a pathologic fracture.^{1,5,7} A pelvic tumor may manifest as referred leg pain. Of the reported cases of retroperitoneal tumors causing leg pain, there was one of lymphoma, one of benign schwannoma, and nine of soft tissue sarcomas. Other reports have shown that pain elicited with the FNA procedure suggests the presence of a neurogenic tumor. This patient had a substantial amount of pain during the biopsy of the mass.⁷ Patients may undergo a variety of radiographic studies before the diagnosis of retroperitoneal tumor is made; it is best made with a CT or MRI scan.

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